Claims

1. A method of compensating for differences between an applied DC link voltage and a predetermined DC link voltage in an electrical machine comprising a rotor, at least one phase winding and a controller configured to energize the phase winding in dependence on [[the]] an angular position of the rotor,

the method comprising:

measuring the applied DC link voltage and

applying a predetermined correction to the angular position of energization of the phase winding in dependence on the value of the applied DC link voltage.

2. A method as claimed in claim 1, in which the controller includes a memory storing a predetermined relationship between the applied DC link voltage and the correction to the angular position.

3. A method as claimed in claim 1 or 2, in which the applied DC link voltage is measured periodically.

4. A method as claimed in claim 1 or 2, in which the applied DC link voltage is measured when the machine is started.

5. A method as claimed in claim 1 or 2, further comprising measuring the applied DC link voltage when the machine is connected to a power supply but before the machine is switched on and applying a predetermined correction to the angular position of energization of the phase winding on starting the machine, in dependence on the value of the measured DC link voltage.

6. A method as claimed in claim 1 or 2, further comprising deriving an average value for the applied DC link voltage at the measurement.

7. A method as claimed in claim 6, in which the step of deriving the average value includes applying a filter to the applied DC link voltage.

8. A method of controlling an electrical machine, including the method of compensating for differences between the applied DC link voltage and a predetermined DC link voltage as claimed in claim 1 or 2.

9. A controller for an electrical machine comprising a rotor and at least one phase winding, the controller being configured to energize the phase winding in dependence on an angular position of the rotor and to apply, on application of a DC link voltage, a predetermined correction to the angular position of energization of the phase winding in dependence on the value of the applied DC link voltage.

10. A controller as claimed in claim 9, further comprising a memory storing a predetermined relationship between the applied DC link voltage and the correction to the angular position.

11. A controller as claimed in claim 10, in which the memory further comprises a predetermined advance angle map representing the energization of the phase winding with respect to the angular position of the rotor over a range of rotor speeds

12. A controller as claimed in claim 11, in which the memory further comprises an angle correction factor to be applied to a predetermined portion of the predetermined advance angle map, which correction factor relates to the difference between the measured input power and a predetermined power.

13. An electrical machine incorporating a controller as claimed in any one of claims 9 to 12.

14. An electrical machine as claimed in claim 13, in the form of a switched reluctance motor.

15. A cleaning appliance incorporating an electrical machine as claimed in claim 13.

16-17. (Canceled)

18. A method as claimed in claim 5, further comprising deriving an average value for the applied DC link voltage at the measurement.

19. A method of controlling an electrical machine, including the method of compensating for differences between the applied DC link voltage and a predetermined DC link voltage as claimed in claim 5.

20. A cleaning appliance comprising the switched reluctance motor of claim 14.